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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants: C. Midgley et al.	)	
Serial No.: 09/465,436	)	Group Art Unit: 2172
Filed: December 16, 1999	)	Examiner: Shahid Al Alam
For: Systems and Methods for Backing Up Data Files	)	Attorney Docket No.: NTK-005.01

APPELLANTS' APPEAL BRIEF UNDER 37 C.F.R. § 1.192(d)

Mail Stop: Board of Patent Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellants herewith submit in triplicate their Appeal Brief in furtherance of their Notice of Appeal filed on September 16, 2003. In the transmittal documents accompanying this Brief, Appellants submit the appeal fee specified in 37 C.F.R. § 1.17(c) and a petition for a five-month extension of time to and including April 16, 2004 under 37 C.F.R. § 1.136(a).

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I. Real Party in Interest (37 C.F.R. § 1.192(c)(1))

The real party in interest in this appeal is LiveVault Corporation, a corporation having a principal place of business at 201 Boston Post Road West, Marlborough, MA 01752. LiveVault Corporation is the Assignee of the entire right, title, and interest in the present application by virtue of assignments from the inventors. These assignments were recorded by the U.S. Patent and Trademark Office on February 27, 2003 at Reel 013450 and Frame 0480 and on March 25, 2003 at Reel 013877 and Frame 0703.

II. Related Appeals and Interferences (37 C.F.R. § 1.192(c)(2))

There are no other appeals or interferences known to Appellants, their Attorney, or the Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

III. Status of Claims (37 C.F.R. § 1.192(c)(3))

This Appeal involves the final rejection of claims 1-28, which are all of the pending claims in the application. The claims on appeal are presented in the Appendix.

A. Total Number of Claims in the Application

Claims 1-28 are pending in the application, of which claims 1, 6, 12, 17, 19, 22, and 27 are independent.

B. Status of All of the Claims in the Application

1. Claims canceled: 0

2. Claims withdrawn from consideration but not canceled: 0

3. Claims pending: 1-28

4. Claims allowed: 0

5. Claims rejected: 1-28

C. Claims on Appeal

Claims 1-28 are on appeal and are presented in the Appendix.

IV. Status of Amendments (37 C.F.R. § 1.192(c)(4))

There are no unentered amendments in the application.

V. Summary of Invention (37 C.F.R. § 1.192(c)(5))

Claims 1-28 are directed to methods and processor programs for storing data. Support for claims 1-28 can be found on p. 14, ll. 1-24 of the specification and in Fig. 1 of the application.

Claims 1-16 and 19-26 claim a back up server, data that is to be backed up by the back up server, and a long term memory device that includes data storage elements and a processor that coordinates storage of data amongst the data storage elements. The long term memory device can include a tape library system, a hard disk system, a read/write CD-ROM system, and a RAID system. The back up server backs up the data by directing the processor of the long term memory device to (i) store the data on the data storage elements, (ii) record the times at which it stores the data on the respective data storage elements, and (iii) associate those storage times with the respective data storage elements. As such, each data storage element that stores at least some of the data to be backed up is associated with one or more respective storage times. The

back up server directs the processor to store data on each data storage element until each data storage element has reached its data storage capacity, e.g., until each data storage element is full. During backup, the processor may detect a condition that indicates that each data storage element has reached its respective data storage capacity. Based on this condition, the back up server determines which of the data storage elements should be overwritten. The back up server makes this determination by directing the processor to compare the storage times that are associated with each data storage element. As a result of the comparison, the processor identifies the data storage element that is associated with the earliest storage time, and the back up server directs the processor to store data on the so identified data storage element.

Claims 17, 18, 27, and 28 also claim a back up server, data that is to be backed up by the back up server, and a long term memory device that includes data storage elements and a processor that coordinates storage of data amongst the data storage elements. The back up server backs up the data by directing the processor of the long term memory device to store the data on a data storage element until the data storage element has reached its data storage capacity, e.g., until the data storage element is full. During backup, the processor may detect a condition that indicates that the data storage element has reached its data storage capacity. Based on this condition, the back up server directs the processor to determine whether another data storage element includes available storage capacity. If the processor identifies a data storage element that includes available storage capacity, the back up server directs the processor to store data on the so identified data storage element. This cycle is iteratively repeated until the processor detects a condition that indicates that each data storage element has reached its respective data storage capacity.

VI. Issues (37 C.F.R. § 1.192(c)(6))

Whether claims 1, 5, 6-9, and 12-28 would have been obvious under 35 U.S.C. § 103(a) to one of ordinary skill in the art at the time of their invention over Saxon (U.S. Patent No. 5,758,359) in view of Iwamoto et al. (U.S. Patent No. 5,604,900).

Whether claims 2-4 would have been obvious under 35 U.S.C. § 103(a) to one of ordinary skill in the art at the time of their invention over Saxon in view of Iwamoto et al. as applied to claim 1 and further in view of Anglin et al. (U.S. Patent No. 6,023,709).

Whether claims 10 and 11 would have been obvious under 35 U.S.C. § 103(a) to one of ordinary skill in the art at the time of their invention over Saxon in view of Iwamoto et al. as applied to claim 6 and further in view of Anglin et al. (U.S. Patent No. 6,023,709).

VII. Grouping of Claims (37 C.F.R. § 1.192(c)(7))

For purposes of this Appeal only, claims 1-16 and 19-26 stand or fall together.

For purposes of this Appeal only, claims 17, 18, 27, and 28 stand or fall together.

VIII. Argument (37 C.F.R. § 1.192(c)(8)(iv))

A. Claims 1-16 and 19-26 are separately patentable from claims 17, 18, 27, and 28.

Claims 1-16 and 19-26 and claims 17, 18, 27, and 28 are separately patentable from each other because they are directed to logically independent methods for storing data. Specifically, claims 17, 18, 27, and 28 are directed to methods in which a back up server directs a processor to store data on each of a number of data storage elements *until* all of the data storage elements have reached their respective data storage capacities. In contrast, claims 1-16 and 19-26 are directed to methods in which, *after* all of the data storage elements have reached their respective

data storage capacities, the back up server determines which of the data storage elements should be used. As such, the methods of claims 17, 18, 27, and 28 "end" where the methods of claims 1-16 and 19-26 "begin." Since the methods of claims 17, 18, 27, and 28 "end" where the methods of claims 1-16 and 19-26 "begin," claims 17, 18, 27, and 28 cannot teach or suggest any feature of claims 1-16 and 19-26. Claims 1-16 and 19-26 and claims 17, 18, 27, and 28 are, therefore, logically independent and separately patentable from each other.

B. Claims 1-16 and 19-26 are patentable over the cited prior art references.

As previously provided herein in Section VII., claims 1-16 and 19-26 stand or fall together for purposes of this Appeal. In the following sections, Appellants present their arguments for distinguishing these claims over the cited prior art references.

1. Claim 1 is not obvious over Saxon in view of Iwamoto et al.

In the Final Office Action, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Saxon in view of Iwamoto et al. (Iwamoto).

Saxon describes a system for performing retroactive backups of data. Saxon performs a scheduled retroactive backup by identifying save sets that were generated after a previous back up and reading a maximum size threshold associated with the scheduled back up. Saxon col. 7, ll. 1-27 and Figs. 3a and 3b. The maximum size threshold indicates "a maximum size (i.e., quantity of data) that the save set at the scheduled level must not exceed. This parameter is chosen by the system administrator or user who determines that this is the maximum amount of data that can be backed up in the allotted backup time." Saxon col. 7, ll. 18-27. Subsequently, Saxon identifies the files in the save sets that are eligible for retroactive back up and, for each save set, computes

a new save set size by summing the sizes of the files in the save set that are eligible for back up. Saxon col. 7, ll. 27-40. Saxon then computes a total size of the data to be retroactively backed up by summing all of the new save set sizes. Saxon col. 7, ll. 41-43. Saxon compares this total size against the maximum size threshold. Saxon col. 7, ll. 48-50. If the total size exceeds the maximum size threshold, Saxon seeks to reduce the total size to less than or equal to the maximum size threshold. Saxon col. 7, ll. 50-51. Saxon reduces the total size by (i) comparing the timestamps of the save sets to be backed up, (ii) removing the most recent save set from the save sets to be backed up, (iii) making the next most recent save set the most recent save set, (iv) computing the total size of the data to be backed up after the most recent save set is removed from the save sets to be backed up, (v) comparing the total size to the maximum size threshold, and (vi) iteratively performing items (i) to (v) until the total size is less than the maximum size threshold. Saxon col. 7, ll. 51-60. If the total size of the remaining save sets to be backed up is not less than or equal to the maximum size threshold and there isn't a next most recent save set, Saxon terminates the scheduled retroactive backup because "the method cannot stay within the maximum size limits constraint and it is therefore likely that a backup operation could not be performed in the allotted time." Saxon col. 7, ll. 60-65.

Iwamoto describes a method for asynchronously and dynamically expanding the amount of space that is allocated to a file. If Iwamoto determines that the empty space allocated to the file is less than a threshold (i.e., a minimum amount of empty space), Iwamoto triggers a data storage/memory expansion for the file. During the expansion, Iwamoto sets an expansion flag for the file and issues a signal that disables input and output processing of the file. After Iwamoto detects that the expansion is complete, Iwamoto unsets the expansion flag and issues a

signal that enables input and output processing of the file. Iwamoto col. 6, ll. 31-33, col. 7, l. 60 to col. 8, l. 5, and col. 8, ll. 17-32.

A prima facie case of obviousness requires three elements to be met. (1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (2) There must be a reasonable expectation of success. (3) The prior art reference (or references when combined) must teach or suggest all the claim limitations. In Re Vaeck, 947 F.2d 488 (Fed. Cir. 1991).

The Examiner failed to establish a prima facie case of obviousness for failure to satisfy any of these elements.

a. There is no suggestion or motivation to combine Saxon with Iwamoto.

In the Final Office Action, the Examiner stated that one of ordinary skill in the art would have been motivated to combine Saxon with Iwamoto because "[the] combination would make a system capable of dynamically expanding a file while retaining an optimum allocation space efficiency of a data store medium and allowing file recovery and job degradation when a failure of a dynamically expanded file or dynamic file expansion itself occurs (column 2, lines 55-67; Iwamoto)." Final Office Action, p. 7.

Appellants disagree with the Examiner's cited motivation for two reasons. First, the Examiner's cited motivation is nothing more than a combination of two verbatim passages from Iwamoto, i.e., Iwamoto col. 2, ll. 55-57 and 65-67. These passages refer exclusively to the advantages of Iwamoto and do not even remotely suggest the desirability of combining the teachings of Iwamoto with the teachings of Saxon regarding data backups. Second, regardless of

the merit in the Examiner's cited motivation, Saxon and Iwamoto describe two systems that are inappropriate for combination. As previously described, Saxon is directed to retroactively backing up data files, while Iwamoto is directed to expanding the space that is allocated to those data files. Neither Saxon nor Iwamoto suggests the desirability of applying Iwamoto's teachings regarding data storage/memory expansion to Saxon's teachings regarding data backup. Since the concepts of data storage/memory expansion and data backup are completely unrelated, and since neither Saxon nor Iwamoto suggests the desirability of applying the concept of data storage/memory expansion to the concept of data backup, one of ordinary skill in the art would not have been motivated to combine Saxon's file aggregation principles to satisfy a size threshold with Iwamoto's data storage/memory expansion techniques.

As such, the Examiner has not satisfied the first element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 1 be reversed and that claim 1 be allowed.

b. There is no reasonable expectation of success.

In the Final Office Action, the Examiner did not provide any reasoning explaining why one of ordinary skill in the art would have a reasonable expectation of success of obtaining the claimed invention by combining Saxon with Iwamoto.

Appellants consider there to be no reasonable expectation of success because Saxon and Iwamoto describe two systems that are inappropriate for combination. As previously described, Saxon and Iwamoto are directed to the entirely unrelated concepts of data backup and file space allocation, and neither Saxon nor Iwamoto suggests the desirability of applying Iwamoto's teachings regarding file space allocation to Saxon's teachings regarding data backup. Since

Saxon and Iwamoto describe systems that are directed to entirely unrelated concepts, and since neither Saxon nor Iwamoto teaches or suggests whether or how such disparate systems can be combined, one of ordinary skill in the art would not have a reasonable expectation of success.

As such, the Examiner has not satisfied the second element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 1 be reversed and that claim 1 be allowed.

c. Even if proper, the combination of Saxon and Iwamoto does not teach or suggest all claimed features.

Assuming, but not agreeing, that the combination of Saxon and Iwamoto is proper, the combination of Saxon and Iwamoto does not teach or suggest all of the features of Appellants' claim 1.

Claim 1 is directed to a process for storing data. Among other things, claim 1 includes "detecting a condition representative of each data storage element having reached a data storage capacity," "based on the condition, directing the processor to compare the time signals for each data storage element," and, "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data."

i. Saxon does not teach the claimed "detecting ... data storage capacity."

In the Final Office Action, the Examiner stated that Saxon taught all of the features of Appellants' claim 1 except for detecting a condition. With respect to the feature of claim 1 that recites "a condition representative of each data storage element having reached a data storage capacity," the Examiner stated that Saxon's "maximum size threshold indicates a maximum size

(capacity of the storage medium) that the save set at the scheduled level must not exceed. This parameter ... is the maximum amount of data that can be backed up in the allotted (reaching the capacity)." Final Office Action, p. 1.

As a preliminary matter, Appellants note that the Examiner's "capacity of the storage medium" language does not appear anywhere in Saxon. During prosecution of the present application, Appellants repeatedly asked the Examiner to identify a reference in Saxon that supported this language. Despite Appellants' repeated requests, the Examiner failed throughout prosecution to identify such a reference. The Examiner thus failed to meet his minimum legal obligations under 37 C.F.R. § 1.104(c)(2) and MPEP § 707.

More substantively, Appellants vigorously disagree with the Examiner's characterization of Saxon, as Saxon's maximum size threshold represents a processing time capacity, and *not* a data storage capacity. As explicitly stated in Saxon, the maximum size threshold is "the maximum amount of data that can be backed up *in the allotted backup time*." Saxon col. 7, ll. 18-27. (Emphasis provided by Appellants.) As also explicitly stated in Saxon, the retroactive backup is terminated if the total size of the save sets to be backed up exceeds the maximum size threshold because "the method cannot stay within the maximum size limits constraint and it is therefore likely that a backup operation could not be performed *in the allotted time*." Saxon col. 7, ll. 60-65. (Emphasis provided by Appellants.) These explicit statements unambiguously demonstrate that Saxon's maximum size threshold represents a limit on the available processing time for a scheduled back up, and not a limit on the available storage capacity for the scheduled back up as claimed by Appellants.

Since the Saxon maximum size threshold does not represent, consider, or otherwise account for the data storage capacity of the Saxon storage medium, Saxon does not teach or

suggest the feature of Appellants' claim 1 that recites "detecting a condition representative of each data storage element having reached a data storage capacity." Since Saxon does not detect the condition, Saxon does not teach or suggest the feature of claim 1 that recites "based on the condition, directing the processor to compare the time signals for each data storage element." Since Saxon does not compare time signals based on detecting the condition, Saxon does not teach or suggest the feature of claim 1 that recites "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data."

ii. Saxon does not teach the claimed "directing ... earliest recorded data."

With respect to the feature of Appellants' claim 1 that recites "directing a processor to store data on the data storage element having the earliest recorded data," the Examiner stated that "[the maximum size threshold] is chosen by the system administrator or user, who determines that this is the maximum amount of data that can be backed up in the allotted backup time (earliest predetermined backup time)." Final Office Action, p. 7.

Once again, Appellants note that the Examiner's "earliest predetermined backup time" language does not appear anywhere in Saxon. During prosecution of the present application, Appellants repeatedly asked the Examiner to identify a reference in Saxon that supported this language. Despite Appellants' requests, the Examiner failed throughout prosecution to identify such a reference. Once again, the Examiner failed to meet his minimum legal obligations under 37 C.F.R. § 1.104(c)(2) and MPEP § 707.

More substantively, Appellants vigorously disagree with the Examiner's characterization of Saxon, as Saxon does *not* store data on the data storage element that stores the earliest

recorded data. As previously described, Saxon identifies those files in previously generated save sets that are eligible for retroactive back up, computes a new save set size for each save set, computes a total size of the data to be backed up, and compares the total size to the maximum size threshold. If the total size exceeds the maximum size threshold, Saxon reduces the total size by (i) comparing the timestamps of the save sets to be retroactively backed up, (ii) removing the most recent save set from the save sets to be retroactively backed up, (iii) making the next most recent save set the most recent save set, (iv) computing the total size of the data to be backed up after the most recent save set is removed from the save sets to be backed up, (v) comparing the total size to the maximum size threshold, and (vi) iteratively performing items (i) to (v) until the total size is less than the maximum size threshold. After the total size is reduced so as to be within the maximum size threshold, Saxon retroactively backs up the remaining save sets. Saxon does, therefore, compare the timestamps of the save sets to be retroactively backed up. In contrast to claim 1, however, Saxon does not store data on the save set associated with the earliest recorded data as a result of this timestamp comparison. Rather, as a result of this comparison, Saxon removes the n-most recent save sets from the save sets to be retroactively backed up, until the size of the remaining save sets to be retroactively backed up is within the maximum size threshold. Saxon does not teach or suggest storing data on the save set associated with the earliest recorded data (either as a result of his timestamp comparison or otherwise), let alone storing data on the claimed data storage element having the earliest recorded data. Saxon does not, therefore, teach or suggest the feature of claim 1 that recites "directing the processor to store data on the data storage element having the earliest recorded data."

iii. Iwamoto does not remedy the deficiencies in Saxon.

In the Final Office Action, the Examiner stated that Saxon teaches all of the features of Appellants' claim 1 except for "detecting a condition as claimed" and that "Iwamoto teaches claimed detecting a condition (column 6, lines 29-38; Iwamoto). Final Office Action, p. 7.

As a preliminary matter, Appellants note that the Examiner's interpretation of Appellants' claim 1 divorces the "detecting" portion of the claim (i.e., the gerund) from the "condition" portion of the claim (i.e., the object of the gerund). Specifically, the Examiner reads the "detecting" portion of the claim onto Iwamoto and the "condition" portion of the claim onto Saxon. Final Office Action, pp. 6 and 7. The verb form of the gerund "detecting" is a transitive verb, i.e., a verb "requiring a direct object to complete meaning." The American Heritage Dictionary of the English Language, Fourth Edition, Houghton Mifflin Co., 2000. By divorcing the gerund portion from the object portion in claim 1, the Examiner's interpretation renders both portions of claim 1 meaningless. As a matter of pure rhetoric, therefore, the Examiner's interpretation of claim 1 is non-sensical. Yet again, the Examiner failed to meet his minimum legal obligations under 37 C.F.R. § 1.104(c)(2) and MPEP § 707.

More substantively, Appellants vigorously disagree with the Examiner's characterization of Iwamoto. As previously described, Iwamoto describes a method for expanding the amount of space that is allocated to a file. If Iwamoto determines that the empty space allocated to the file is less than a threshold (i.e., a minimum amount of empty space), Iwamoto triggers a data storage/memory expansion for the file. During the expansion, Iwamoto sets an expansion flag for the file and issues a signal that disables input and output processing of the file. After Iwamoto detects that the expansion is complete, Iwamoto unsets the expansion flag and issues a signal that enables input and output processing of the file. At most, therefore, Iwamoto teaches

detecting a condition representative of whether the remaining empty space in a file is below a minimum amount. Additional data can, however, still be stored in the remaining empty space in the file even if that space is below a minimum amount. Since additional data can be stored in the remaining empty space in the file, Iwamoto's condition is not representative of the file having reached a data storage capacity. Iwamoto does not, therefore, teach or suggest the feature of claim 1 that recites "detecting a condition representative of each storage element having reached a data storage capacity." Since Iwamoto does not detect the condition, Iwamoto does not teach or suggest the feature of claim 1 that recites "based on the condition, directing a processor to compare the time signals for each data storage element." Since Iwamoto does not compare time signals based on detecting the condition, Iwamoto does not teach or suggest the feature of claim 1 that recites "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data."

Furthermore, regardless of whether Iwamoto teaches or suggests the feature of claim 1 that recites "detecting a condition representative of each storage element having reached a data storage capacity," Iwamoto does not contain any description, teaching, or suggestion directed to the feature of claim 1 that recites "directing the processor to store data on the data storage element having the earliest recorded data."

iv. Summary

In summary, even if the combination of Saxon and Iwamoto is proper, the combination of Saxon and Iwamoto does not teach or suggest all of the features of claim 1. Neither reference teaches or suggests the features of claim 1 that recite "detecting a condition representative of each data storage element having reached a data storage capacity," "based on the condition,

directing the processor to compare the time signals for each data storage element," and "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data." Furthermore, regardless of whether either reference teaches the feature of claim 1 that recites "detecting a condition representative of each data storage element having reached a data storage capacity," neither reference teaches or suggests the feature of claim 1 that recites "directing the processor to store data on the data storage element having the earliest recorded data."

As such, the Examiner has not satisfied the third element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 1 be reversed and that claim 1 be allowed.

2. Claims 5, 6-9, 12-16, and 19-26 are not obvious over Saxon in view of Iwamoto.

Claim 5 is dependent on claim 1. Since claim 1 is not obvious over Saxon in view of Iwamoto, claim 5 is not obvious over Saxon in view of Iwamoto, either.

Claims 6-9, 12-16, and 19-26 recite features that are similar to those included in claim 1. Claims 6-9, 12-16, and 19-26 are not obvious over Saxon in view of Iwamoto based on the reasons previously provided herein with respect to claim 1 in Section VIII.B.1.

3. Claims 2-4 are not obvious over Saxon in view of Iwamoto and Anglin et al.

In the Final Office Action, the Examiner rejected claims 2-4 under 35 U.S.C. § 103(a) as being unpatentable over Saxon in view of Iwamoto as applied to claim 1 and further in view of Anglin et al. (Anglin).

Anglin describes a system that can diagnose and handle errors in an automated and hierarchical storage management system. (Anglin, abstract.) Anglin does not contain any teaching or suggestion directed to the features of claim 1 that recite "detecting a condition representative of each data storage element having reached a data storage capacity," "based on the condition, directing the processor to compare the time signals for each data storage element," and "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data."

Claims 2-4 depend from claim 1 and thus include all of the features of claim 1. Since Anglin fails to teach or suggest the same features of claim 1 that Saxon and Iwamoto fail to teach or suggest, Anglin does not remedy the deficiencies of Saxon and Iwamoto as applied to claim 1. Accordingly, claim 1 and its dependent claims 2-4 are patentable over the combination of Saxon, Iwamoto, and Anglin.

4. Claims 10 and 11 are not obvious over Saxon in view of Iwamoto and Anglin.

Claims 10 and 11 recite features that are similar to those included in claims 2-4. Claims 10 and 11 are not obvious over Saxon in view of Iwamoto and Anglin based on the reasons previously provided herein with respect to claims 2-4 in Section VIII.B.3.

C. Claims 17, 18, 27, and 28 are patentable.

As previously provided herein in Section VII., claims 17, 18, 27, and 28 stand or fall together for purposes of this Appeal. In the following sections, Appellants present their arguments for distinguishing these claims over the cited prior art references.

1. Claim 17 is not obvious over Saxon in view of Iwamoto.

In the Final Office Action, the Examiner rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Saxon in view of Iwamoto. As previously provided herein with respect to claim 1 in Section VIII.B.1., a prima facie case of obviousness requires three elements to be satisfied. The Examiner failed to establish a prima facie case of obviousness for failure to satisfy any of these elements.

With respect to suggestion or motivation to combine Saxon with Iwamoto, Appellants reiterate the arguments previously provided herein with respect to claim 1 in Section VIII.B.1.a. As explained therein, the Examiner has not satisfied the first element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 17 be reversed and that claim 17 be allowed.

With respect to reasonable expectation of success, Appellants reiterate the arguments previously provided herein with respect to claim 1 in Section VIII.B.1.b. As explained therein, the Examiner has not satisfied the second element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 17 be reversed and that claim 17 be allowed.

With respect to teaching or suggestion of all claimed features, Appellants state that the combination of Saxon and Iwamoto, even if proper, does not teach or suggest all of the features of claim 17.

Claim 17 is directed to a process for storing data. Among other things, claim 17 includes "detecting a condition representing a data storage capacity for at least one of at least two data storage elements," "based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity," and "based on whether

at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity."

In the Final Office Action, the Examiner rejected claim 17 on the same basis as claim 1. Appellants, therefore, reiterate the arguments previously provided herein with respect to claim 1, Saxon, and Iwamoto in Sections VIII.B.1.c.i and iii.

As explained in Section VIII.B.1.c.i., the Saxon maximum size threshold does not represent, consider, or otherwise account for the data storage capacity of the Saxon storage medium. Saxon does not, therefore, teach or suggest the feature of claim 17 that recites "detecting a condition representing a data storage capacity for at least one of at least two data storage elements." Since Saxon does not detect the condition, Saxon does not teach or suggest the feature of claim 17 that recites "based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity." Since Saxon does not determine whether a data storage element includes available data storage capacity based on the detected condition, Saxon does not teach or suggest the feature of claim 17 that recites "based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity."

As explained in Section VIII.B.1.c.iii., Iwamoto at most teaches detecting a condition representative of whether the remaining empty space in a file is below a minimum amount. Additional data can, however, still be stored in the remaining empty space in the file even if that space is below a minimum amount. Since additional data can be stored in the remaining empty space in the file, Iwamoto's condition is not representative of the file having reached a data

storage capacity. Iwamoto does not, therefore, teach or suggest the feature of claim 17 that recites "detecting a condition representing a data storage capacity for at least one of at least two data storage elements." Since Iwamoto does not detect the condition, Iwamoto does not teach or suggest the feature of claim 17 that recites "based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity." Since Iwamoto does not determine whether a data storage element includes available data storage capacity based on the detected condition, Iwamoto does not teach or suggest the feature of claim 17 that recites "based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity."

Furthermore, regardless of whether Saxon and/or Iwamoto teaches or suggests the feature of claim 17 that recites "detecting a condition representing a data storage capacity for at least one of at least two data storage elements," neither Saxon nor Iwamoto contains any description, teaching, or suggestion directed to the features of claim 17 that recite "based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity" and "based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity."

In summary, even if the combination of Saxon and Iwamoto is proper, the combination of Saxon and Iwamoto does not teach or suggest all of the features of claim 17. Neither reference teaches or suggests the features of claim 17 that recite "detecting a condition representing a data storage capacity for at least one of at least two data storage elements," "based on the detected condition, determining whether at least one of the at least two data storage elements includes

available data storage capacity" and "based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity." Furthermore, regardless of whether either reference teaches the feature of claim 17 that recites "detecting a condition representing a data storage capacity for at least one of at least two data storage elements," neither reference teaches or suggests the features of claim 17 that recite "based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity" and "based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity."

As such, the Examiner has not satisfied the third and final element of a prima facie case of obviousness. Appellants therefore request that the Examiner's rejection of claim 17 be reversed and that claim 17 be allowed.

2. Claims 18, 27, and 28 are not obvious over Saxon in view of Iwamoto.

Claim 18 is dependent on claim 17. Since claim 17 is not obvious over Saxon in view of Iwamoto, claim 18 is not obvious over Saxon in view of Iwamoto, either.

Claims 27 and 28 recite features that are similar to those included in claim 17. Claims 27 and 28 are not obvious over Saxon in view of Iwamoto based on the reasons previously provided herein with respect to claim 17 in Section VIII.C.1.

IX. Conclusion

For the foregoing reasons, Appellants submit that the Examiner did not establish a prima facie case of obviousness under 35 U.S.C. § 103(a) with respect to any of claims 1-28.

Accordingly, Appellants request that the Board reverse all of the Examiner's rejections and grant a Notice of Allowance in the application.

Respectfully submitted,
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Appendix: Claims on Appeal

Appellants herewith present a copy of claims 1-28 under appeal.

1. A process for storing data, comprising

providing a back up server having storage for a plurality of data files,

providing a long term memory device having a plurality of data storage elements and a processor for coordinating the operation of the plurality of data storage elements,

directing the processor to store data on the data storage elements and record a time signal representative of the time of storing data,

detecting a condition representative of each data storage element having reached a data storage capacity,

based on the condition, directing the processor to compare the time signals for each data storage element, and

based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data.

2. A process according to claim 1, wherein the long term memory device includes a tape library system having a plurality of drive elements.

3. A process according to claim 2, wherein the tape library includes a robotic controller for moving tapes in and out of a tape drive system.

4. A process according to claim 1, wherein the long term memory device includes a RAID storage system.

5. A process according to claim 1, wherein directing the processor to store data on the data storage elements includes directing the processor to store data on each data storage element until each data storage element reaches data storage capacity.

6. A method of storing data comprising:

detecting a condition representing a data storage capacity of at least one of at least two data storage elements; and,

based on the detected condition, storing the data on the data storage element associated with an earliest time of storage.

7. The method of claim 6, wherein storing the data on the data storage element associated with an earliest time of storage comprises:

associating at least one time of storage with the at least two data storage elements.

8. The method of claim 6, wherein storing the data on the data storage element associated with an earliest time of storage comprises:

comparing at least one time of storage associated with the at least two data storage elements; and

identifying the data storage element associated with the earliest time of storage.

9. The method of claim 6, further comprising:

providing a storage system including the at least two data storage elements and a processor for controlling data storage on the at least two data storage elements.

10. The method of claim 9, wherein the storage system includes at least one of a tape library system, a hard disk system, a read/write CD-ROM system, and a RAID system.

11. The method of claim 10, wherein the storage system includes a tape library system having a library of tapes, a tape drive, and a robotic controller for moving tapes between the library and the tape drive.

12. A method of storing data comprising:

detecting a condition representing a data storage capacity of at least one of at least two data storage elements;

based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity; and,

based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the data storage element associated with an earliest time of storage.

13. The method of claim 12, wherein storing the data on the data storage element associated with an earliest time of storage comprises:

associating at least one time of storage with the at least two data storage elements.

14. The method of claim 12, wherein storing the data on the data storage element associated with an earliest time of storage comprises:

comparing at least one time of storage associated with the at least two data storage elements; and

identifying the data storage element associated with the earliest time of storage.

15. The method of claim 12, further comprising:

based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity.

16. The method of claim 15, wherein storing the data on the at least one data storage element including available data storage capacity comprises:

storing the data on the at least one data storage element including available data storage capacity until the at least one data storage element reaches data storage capacity.

17. A method of storing data comprising:

detecting a condition representing a data storage capacity for at least one of at least two data storage elements;

based on the detected condition, determining whether at least one of the at least two data storage elements includes available data storage capacity; and,

based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity.

18. The method of claim 17, wherein storing the data on the at least one data storage element including available data storage capacity comprises:

storing the data on the at least one data storage element including available data storage capacity until the at least one data storage element reaches data storage capacity.

19. A processor program for storing data, the processor program being tangibly stored on a processor-readable medium and comprising instructions operable to cause a processor to:

detect a condition representing a data storage capacity of at least one of at least two data storage elements; and,

based on the detected condition, store the data on the data storage element associated with an earliest time of storage.

20. The processor program of claim 19, further comprising instructions operable to cause a processor to:

associate at least one time of storage with the at least two data storage elements.

21. The processor program of claim 19, further comprising instructions operable to cause a processor to:

compare at least one time of storage associated with the at least two data storage elements; and

identify the data storage element associated with the earliest time of storage.

22. A processor program for storing data, the processor program being tangibly stored on a processor-readable medium and comprising instructions operable to cause a processor to:

detect a condition representing a data storage capacity of at least one of at least two data storage elements;

based on the detected condition, determine whether at least one of the at least two data storage elements includes available data storage capacity; and,

based on whether at least one of the at least two data storage elements includes available data storage capacity, store the data on the data storage element associated with an earliest time of storage.

23. The processor program of claim 22, wherein the instructions to store the data on the data storage element associated with an earliest time of storage comprise instructions to:

associate at least one time of storage with the at least two data storage elements.

24. The processor program of claim 22, wherein the instructions to store the data on the data storage element associated with an earliest time of storage comprise instructions to:

compare at least one time of storage associated with the at least two data storage elements; and,

identify the data storage element associated with the earliest time of storage.

25. The processor program of claim 22, further comprising instructions operable to cause a processor to:

based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the at least one data storage element including available data storage capacity.

26. The processor program of claim 25, wherein the instructions to store the data on the at least one data storage element including available data storage capacity comprise instructions to:

store the data on the at least one data storage element including available data storage capacity until the at least one data storage element reaches data storage capacity.

27. A processor program for storing data, the processor program being tangibly stored on a processor-readable medium and comprising instructions operable to cause a processor to:

detect a condition representing a data storage capacity for at least one of at least two data storage elements;

based on the detected condition, determine whether at least one of the at least two data storage elements includes available data storage capacity; and,

based on whether at least one of the at least two data storage elements includes available data storage capacity, store the data on the at least one data storage element including available data storage capacity.

28. The processor program of claim 27, wherein the instructions to store the data on the at least one data storage element including available data storage capacity comprise instructions to: store the data on the at least one data storage element including available data storage capacity until the at least one data storage element reaches data storage capacity.